DOCUMENT RESUME

ED 196 393 HE 013 414

AUTHOR Ingalls, D. Lee
TITLE Student Financial Assistance Distribution: A Study of Patterns at Three Institutions of Higher Education.
INSTITUTION National Advisory Council on Women's Educational Programs, Washington, D.C.
PUB DATE Aug 80
NOTE 51p.: Not available in paper copy due to marginal legibility.

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *College Students; Community Colleges; Comparative Analysis; Dependents; Federal Aid; Federal Programs; *Females; Higher Education; Income; *Males; Marital Status; Parent Financial Contribution; *Predictor Variables; Race; Sex Discrimination; Small Colleges; State Aid; State Universities; Student Characteristics; *Student Financial Aid; *Student Needs
IDENTIFIERS Basic Educational Opportunity Grants; Guaranteed Student Loan Program; National Direct Student Loan Program; Supplemental Educational Opportunity Grants

ABSTRACT

Current financial assistance files at three public colleges/universities were examined to determine whether there is discrimination of women in the award of financial aid. Attention was directed to several specific assistance programs: Basic Educational Opportunity Grant Awards, National Direct Student loans, Guaranteed Student Loans, Supplemental Educational Opportunity Grant awards, work-study loans, and state aid awards. The three institutions differed in several respects: one was a major graduate and research institution in the West with a diverse student body, one was a large community college system in the East with a large ethnic minority population, and the other was a smaller commuter campus. Study variables included sex, marital status, age, dependent/independent status, ethnic status, number of dependents, income, and parental financial contribution. Findings indicate that there is a fairly equal distribution of aid by type and amount between males and females. It is suggested that a slight favoring of females in average awards may be due to their being the majority of single heads of households and are therefore more needy. A brief literature review, references, and small-print statistical tables of the findings are included. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

HE

ED196393

national advisory council on women's educational programs

BEST COPY AVAILABLE

Student Financial Assistance Distribution

A Study of Patterns at Three Institutions of Higher Education

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

August, 1980

HE 013 414

STUDENT FINANCIAL ASSISTANCE DISTRIBUTION

A Study of Patterns

At Three Institutions of Higher Education

August, 1980

by

D. Lee Ingalls
Financial Assistance Officer
University of Colorado

A REPORT OF THE NATIONAL ADVISORY COUNCIL ON WOMEN'S EDUCATIONAL PROGRAMS

FEB 2 1981

national advisory council on women's educational programs

Suite 821
1832 M St., N.W.
Washington, D.C. 20036
(202) 653-5846

PREFACE

The National Advisory Council on Women's Educational Programs (NACWEP) was established by Congress in the Women Educational Equity Act of 1974 with seventeen members appointed by the President and confirmed by the Senate, along with three ex officio members. The mandate of the Council is to advise the Secretary of Education and report to the Congress concerning needs and methods for achieving educational equity for women and girls in the United States.

In 1977 the Council published a report entitled Efforts Toward Sex Fairness in the Use of Education Division Funds which addressed, among other subjects, equity in the distribution of student financial assistance. Based on inadequate available data, largely from the Office of Education, the report found a strong possibility that women received smaller and, in some cases, proportionately fewer awards than men. Few of those data reflected the effects of legislative and regulatory attempts made after 1975 to ensure sex fairness in aid distribution. In the absence of the comprehensive analysis by the Education Department which the Council had recommended, NACWEP itself commissioned another small study, this time based on primary data -- current financial assistance files at several demographically distinct campuses.

This report is the result of that undertaking. It is published at a time when the Congress is reconsidering its student aid programs, and provides the hopeful message that existing laws and regulations seem to be working equitably. Because it shows that women tend to be more dependent than men on Federal aid, however, it highlights the fact that reduced support for those programs will have a disproportionately negative effect on women.

The report is unusual for the Council: it suggests areas for further research, but makes no policy recommendations. In large measure this is due to the fact that the system is working, a finding the Council is extremely pleased to publish.

Eliza M. Carney, Tempe, AZ, chair

Gladys Gunn, Dayton, OH, Vice-Chair

Joy R. Simonson, Executive Director

Marjorie Bell Chambers, Los Alamos, NM
Agnes I. Chan, San Francisco, CA
Sr. M. Isolina Ferre, Ponce, PR
Elizabeth Z. Fryer, Nashville, TN
Jon Fuller, Ann Arbor, MI
Ellen Hoffman, Washington, D.C.
Kathleen E. Humphrey, Durham, NC
Thera C. Johnson, Ogden, UT
Anna Doyle Levesque, Portsmouth, RI
Paul Parks, Boston, MA
Mary Beth Peters, Pittsburgh, PA
J. Richard Rossie, Memphis, TN
Bernice Sandler, Silver Spring, MD
Marguerite Selden, Washington, D.C.
Susan Margaret Vance, Chicago, IL

EX OFFICIO MEMBERS

Director, U.S. Commission on Civil Rights; Director, Women's Bureau, U.S. Department of Labor; Women's Action Program, U.S. Department of Health Education and Welfare

A STUDY OF STUDENT FINANCIAL ASSISTANCE DISTRIBUTION
PATTERNS AT THREE INSTITUTIONS OF HIGHER EDUCATION

FINDINGS

This study provides a description of the significant predictors of student aid recipients with special attention to sex and ethnic status.

Conclusions of this study indicate that there is a fairly equal distribution of aid by type and amount between males and females. There is a slight favoring of females in average awards, probably because they comprise the majority of single heads of households and are therefore more "needy".

If Federal and state programs are intended to provide equal access and choice, they seem to be meeting those goals among enrolled students.

INTRODUCTION

Participation in post-secondary education has traditionally been one of the major mechanisms for achieving equality of opportunity and social mobility in the United States. There has been a great variety of research on access since the 1960's. The Carnegie Commission, in its report A Chance to Learn, examined barriers to admissions, and concluded that such factors as low family income, ethnic grouping, geographic location, age, quality of early schooling and sex constitute formidable handicaps for many Americans.

It is evident from a review of the more recent literature, however, that participation by women in higher education is in a period of transition.

Enrollment patterns indicate that participation by women continues to increase, at least slightly, at all four degree levels. The National Center for Education Statistics (Brown, 1979), reports that in 1971 the total number of bachelor's degrees awarded in the United States was 846,110 of which 43.4 percent were awarded to women. In 1977, the total was 928,256 and the percentage had risen to 46.2.

Brown also reports that in 1971, 231,486 master's degrees were awarded, of which 40.1 percent were awarded to women. By 1977, of the 318,241 degrees awarded, that percentage increase to 47.1. The per year increase was slight, but incremental.

Brown showed the same trend for doctoral degrees. The year-by-year data showed that the women's percentage representation increased from 1971-77, but still they account for only one-fourth of all doctoral degrees awarded. At the bachelor's and master's degree levels, they account for almost one-half.

It was also Brown's finding that at both the bachelor's and master's degree levels, women tended to show the greatest increase in percentage representation

in those fields in which they have had small representation. Their representation in traditionally female fields, such as home economics, letters, etc., remained virtually unchanged.

At the doctoral degree level, he found that a similar trend was evident. Women's gains were greatest in the traditionally non-female fields. Women continued to increase their percentage representation in all eight of the first professional fields (medicine, law, etc.) in which trends could be measured, but are still a distinct minority in all fields. The two fields of law and medicine together accounted for 85 percent of all first professional degrees awarded to women with 71.4 percent of all professional degrees being awarded to men.

One set of issues at the postsecondary level centers on the provision of public financial support to those who would be otherwise unable to participate in postsecondary education.

Most of the data on the distribution of financial assistance were collected prior to the legislation in 1976 and 1977, which prohibited discrimination in aid programs, and almost none reflect the impact of the Middle Income Student Assistance Act of 1978. These changes in statutes, as well as attending changes in regulations, have had a significant impact in terms of both dollars available and the demography of populations served by Federal aid programs.

The largest and still the fastest growing mode of Federal expenditure for higher education is assistance to individuals. According to Finn (1978), these expenditures account for $6 billion of the $7 billion added to the Federal higher education budget for the period 1968-77. The Office of Education has estimated that approximately $5 billion will be spent in 1980-81 to aid some six million students in the Title IV (Higher Education Act) programs alone. Congressional Budget Office estimates that for 1977 the Federal expenditure approached $8.5 billion in student aid, and that the state, institutional, and private student aid programs provided approximately $1.5 billion more.

The idea that poverty or need justifies Federal help for college students was strengthened with the civil rights and antipoverty activities of the 1960's. Presidents and Congress have since pursued a student aid strategy of giving priority to programs that help needy people go to college. The addition of the Middle Income Student Assistance Act of 1978 to this traditional strategy, however, expanded assistance to less impoverished students. This legislation was largely a response to the restrictive nature of the eligibility determination for need-based assistance; "need" had become a serious problem for the middle-income student.

The large and growing Federal involvement in financial assistance to college students bespeaks an increasing national interest in the ability of individuals to obtain the benefits of higher education. Higher education is expensive, and if people wishing to avail themselves of it had to pay the full costs, many would not be able to attend at all.

Two opposing doctrines are reflected in current Federal financial aid programs. One is that higher education is, like elementary and secondary education, a public good through which the country accrues benefits, the costs of which should be financed by the public.

The second is that students, as the direct beneficiaries of education, should pay for it themselves.

These two opposing doctrines are mediated by an assessment of the student's (and his or her family's) ability to pay for the costs of education. Depending on demonstrable need, various expenses may be underwritten by institutional subsidies, and direct Federal aid is available to help with other costs such as room, board, transportation, and books.

In the aid profession, "need" is the amount that remains after the sum that the student (and his or her family) can contribute is subtracted from the total cost of attendance. This basically simple idea has become enormously complex, since those dispensing the aid want a uniform and equitable basis for assessing the need of different students. Thus, "needs analysis system" has been designed to estimate the potential contribution of a family towards the cost of higher education.

The needs analysis system operates on a set of assumptions about household income and budget. Some are objective, such as size of household and the number attending postsecondary education. Others are subjective, and concern personal standards of living and spending priorities.

A second independent variable in the scheme is the cost of education at a particular institution. Factoring in these variables, a student (and his or her family) might show need in meeting the costs at a high tuition private institution, whereas the same family would be expected to pay all costs at a low tuition community college.

Because the price differences result as much from an uncoordinated assortment of public and private subsidies as from true differences in cost and quality of the educational products being offered, they make for a warped marketplace in which two institutions offering much the same education charge widely differing prices for it. The situation does not enhance equality of opportunity, nor does it foster educationally motivated choices on the part of the student. Although many factors enter into the selection of colleges by students, the cost of attendance is not inconsequential.[1/]

Studies have given a great deal of attention to the issue confronting students of how to meet costs of postsecondary education. Attention has been focused on public versus private costs, racial and ethnic groups, and part-time attendance; however, not much research has examined whether funds to meet college costs are distributed differently on the basis of sex.

Despite the dearth of sex related data, the task of determining who is benefiting from the major financial aid programs is essential. Perhaps one reason only limited research has been conducted in this area is that most policies regarding the distribution of aid are not based on sex, and financial aid programs are specifically prohibited by law from being distributed

1/ See Michael S. McPherson, "The Demand for Higher Education", in David W. Breneman and Chester E. Finn, Jr., eds., Public Policy and Private Higher Education. (Brookings Institution, 1978).

differently based on gender. Another reason may be lack of interest on the part of institutions and the Office of Education. The reporting requirements for the four major programs of financial aid no longer include data on distribution by sex.

Because a major aim of financial assistance is to provide access or educational equity, it is useful to look at what data are available on distribution patterns. Although statisticians did not anticipate the interest that would exist for these data 5-10 years ago, making them less complete than is desirable, they are nonetheless revealing.

MAJOR RESEARCH ON AID DISTRIBUTION

Westervelt (1975) identifies five major sets of institutional factors that tend to exclude women from education beyond high school: (1) admission practices, (2) financial aid practices, (3) institutional regulations, (4) differences in curriculum planning and student services, and (5) faculty and staff attitudes.

In financial aid practices, she cites the institutional practices most responsible for denying women equal access to financial aid: (1) making scholarships, fellowships, and loans more available to men than to women; (2) restricting financial aid to full-time students only; (3) withholding financial aid from women who are married, pregnant, or mothers; (4) failing to provide an adequate variety of deferred payment plans; (5) failing to provide financial aid for child care and other expenses; (6) limiting employment opportunities for women students; and (7) imposing different cost bases or charges for male and female students, or for part-time and full-time students.

A study by Kayden (1970) showed that women received 43.3 percent of the National Defense Student Loans, a proportion which approximated their representation in the undergraduate population. Women received 49.0 percent of the work-study money, 36.4 percent of guaranteed loans, 40.2 percent of Equal Opportunity Grants, and 20.0 percent of NDEA fellowship money. Kayden's impression from interviewing student and admissions people in various regions was that women were consciously discriminated against in grant and loan decisions and were therefore unable to attend school because they did not have the necessary financial support.

In a national survey of 3,363 college sophomores in 1969-70, Haven and Horch (1972) found that the average award to men was $1,001 but only $789 to women in spite of the absence of significant differences in socioeconomic and income levels between the two groups. The average institutionally administered scholarship or grant was $671 for men and $515 for women. Student employment awarded as part of institutional financial aid packages paid an average of $712 to men and only $401 to women. Loans were the aid that women were apt to receive in larger amounts: the average college loan to women was $491 and $303 to men. Although comparable proportions of men and women were in debt for college, the mean debt for women exceeded that for men in all types of institutions.

Studies conducted during the middle of the 1970's begin to reveal a somewhat different picture of distribution by sex.

Atelsek and Gomberg (1977) found that, in estimates of recipients for 1976-77, about 54 percent of all aid recipients were women. In the 600 institutions sampled, they also found that the proportion varied by institutional setting, ranging from 64 percent at public 2 year colleges, to a low of 41 percent at private universities. Women's proportional enrollment was 47 percent nationally. They constituted the majority (51 percent) at private two year colleges only, and were underrepresented (41 percent) at private universities.

The sex distribution in this study varied among the five Federal assistance programs they surveyed. They found the proportion of women was smallest for the two loan programs (46 percent for Guaranteed Student Loan and 50 percent for National Direct Student Loan), and highest for the Basic Educational Opportunity Grant and College Work-Study (55 percent for each).

The information reported in their study indicated that women were represented in proportions close to or exceeding their enrollment. The authors did not, however, break down the average amount of assistance to women and men under each of the 5 programs.

Caplan (1980) conducted a follow-up sampling of 40,525 students surveyed by the Cooperative Institutional Research Program (CIRP) and a 50 percent random sample of students enrolled in 44 proprietary institutions.

Her findings indicate some change from studies conducted in the earlier part of the decade. She found that the highest percentage of students receiving any type of assistance were from the middle income families, where the income ranged from $8,000 to $20,000.

There has been speculation in the financial aid community that, with the Middle Income Student Assistance Act providing Federal grants to students from families earning up to $25,000, and the opening of Federal loan programs to all families regardless of income, an even smaller percentage of low income students will receive aid.

As Caplan assesses the situation, "first-come, first-served" principles will keep the students who are last minute decision makers from some sources of aid, while complex application forms and involved procedures will deter others. Lower income families often have fewer skills to understand and cope with bureaucratic procedures.[2/]

Conclusions from her study, however, indicate that there is a fairly equitable distribution of aid between males and females; the handicaps are shared equally.

In his research of factors influencing student persistence, Astin (1976) analyzes several factors to determine whether the type and amount of aid and the conditions of its administration have any effect on a student's chance of completing college. The evidence he presents indicates that the source and amount of financial aid can be important factors. He found, for example, that availability of scholarships and grants are

2/ Caplan, Linda G., "Differences in Types and Amounts of Financial Aid by Institution Category and Sex", The Journal of Student Financial Aid. Vol. 10, No. 2, May 1980, pp. 12.

associated with small increases in student persistence rates. These beneficial effects are confined largely to women from low-income families and to men from middle income families. The amount of grant support, however, appeared to be a major factor in student persistence, particularly among black students.

In the loan category, Astin found that reliance on loans is associated with decreased persistence among men in all income groups. Among women, the effects were highly variable depending on the amount of the loan support and the income level of the woman's parents. Reliance on loans was associated with increased persistence among black students attending white colleges.

Participation in the Federal Work-Study Program seemed to enhance student persistence, particularly among women and blacks. Work-Study had its most consistent impact among students from middle income families.3/

Astin's tentative results underscore the need for research to examine not only various packages, but also possible interactions of these packages with the student's race and sex with income.

RESEARCH HYPOTHESIS

This study was designed to test whether there is any discernable discrimination based on sex or gender-related sub-group membership in the awarding of financial assistance to students.

Research conducted prior to 1974 found that women were not receiving assistance dollars in proportion to their enrollment, and they were underrepresented as recipients under the two Federal loan programs -- National Direct Student Loans and Guaranteed Student Loans. These studies identified several factors that were hypothesized to have limited the participation of women. The research did not, generally, collect or analyze the award amount to individual recipients.

The research hypothesis for this study is that while women may be receiving total dollars nearly in proportion to their enrollment percentages, they may still be underrepresented in individual programs.

METHODS

Three diverse institutions of higher education (campuses A, B, and C) were chosen to test the hypothesis. Factors governing the choice of institutions were: (1) that they have an accessible central computing capacity to facilitate access to a large core of data by one program; and (2) that to some extent, different areas of the country and type of institutions be represented.

3/ Astin, Alexander W., Preventing Students From Dropping Out, Jossey and Bass Publishers, San Francisco, 1976.

Campus A is major university in the West. The institution is a graduate and research institution as well as having a traditional bachelor's degree program. Headcount for fall 1978 was 21,318 with 17,439 undergraduates. Of the undergraduates, 55 percent were men and 45 percent were women. Total ethnic headcount was 1,513. Of the total headcount, 2.3 percent Black, .5 percent American Native, 2.3 percent Asian and 3.6 percent Hispanic.

Campus B is a smaller, suburban commuter campus. Undergraduate headcount for fall 1978 was 3,222, with toal headcount being 4,390. Men comprised 50 percent of the population and 50 percent of undergraduates.

Campus C is a large, suburban community college system near a major metropolitan area on the East coast. The system serves a local area as well as two nearby states. It has a large ethnic minority population.

All three institutions tested were public.

In order to examine this situation, data files were set up that contained variables on every financial aid recipient. The only variation was that data for Campus A was 1979-80 and for Campus B and C it was 1978-79.

The data elements selected for testing were: sex, marital status, age, dependent/independent status, ethnic status, number of dependents, income, parent contribution, work-study awards, Basic Educational Opportunity Grant Awards, National Direct Student Loans, State Aid, Guaranteed Student Loans and Supplemental Educational Opportunity Grant Awards.

PROCEDURE

The intitial task of this analysis was to examine the various variables for "behavior" to assure that none of our tolerance values were contained in the data base.

For Campus C, there was no problem with any of the variables from the standpoint of unreadable data. The variables dealing with the fiscal condition of the students naturally had a lot of zero values since there is a great deal of heterogeneity in the source of income and the fiscal condition of the students/families. In order to get an idea of the total amount of assistance the students were getting three additional variables were computed as follows:

1. TOTGNT: Total available income to the student which included GI Benefits.
2. TOTGNT 2: Total actual grant or aid money exluding GI Benefits.
3. FINCOND: The financial condition of the student based on family income, help, etc.

STATISTICAL ANALYSIS

To fully assess the relationships among the large number of variables, the analysis of variance and regression techniques were used to determine

the degree and significance of any differences among the various groups. The initial task was to remove the inherent effect of personal financial condition on the amount of financial aid that a person was to receive. This was successfully accomplished by executing a three way factorial design analysis of variance with the single covariate of financial condition. (Printout available) This technique removed the inherent bias of personal income from the equation. The results showed that income was, as might be assumed, a highly significant factor in determining the amount of aid a person receives.

The other three factors of sex, ethnic origin and residency also turned out to be statistically significant at the 0.032, 0.001 and 0.007 levels respectively.

The mean value of total aid for the various groups are as follows: (five missing values)

Total Population	(1421)	$ 826.92
Males	(543)	778.80
Females	(770)	866.69
Amer. Native	(7)	1084.43
Blacks	(310)	922.18
Asians	(143)	1130.27
Hispanics	(92)	901.76
Caucasian	(816)	729.87
Other	(53)	781.51
County	(1254)	802.63
State	(54)	894.02
Non-Resident	(133)	1025.07

In addition to the analysis of variance, a number of regression equations were completed to determine if the variables available to us could be used to predict the amount and type of aid. Where using TOTGNT 2 as the dependent variable and financial condition, ethnic background, sex, residency, birth-year, and marital status as the predictors, the results obtained in the analysis of variance were essentially replicated.

The correlation for financial condition was a negative 0.195 which commendably reflects that the aid programs are definitely helping those people who need it most. The correlation of ethnic origin was a negative 0.1544 which indicates that the non-Caucasian students are receiving more financial assistance.

The variable sex was entered into the equation next and very weakly indicates (0.058) that women are receiving slightly more assistance. Even though the multiple (correlation) for the entire equation (See Table 1) is statistically significant at 0.25, it is of little practical significance as a predictor since only 6 percent of the variance is successfully accounted for.

In addition to the above regression equation, separate equations were computed on various permutations of the variables TOTGNT and TOTGNT 2 with results similar to the one cited above. Financial condition was in all cases the strongest moderator with ethnic origin and other demographic variables as statistically significant but weak predictors. (Printout available).

To determine if all types of aid were in fact distributed to similar people, we also ran regression equation on state aid which produced parental contribution as the most significant predictor. (See summary Table II).

Again, the multiple (correlation) was only 0.25 which is statistically significant but only accounts for 6 percent of the variance; all types of aid are likely to be distributed to similar people.

Guaranteed Student Loan aid yielded similar results with dependency status as the strongest predictor with a multiple of only 0.16 and approximately 3 percent of the variance accounted for. (See Table III).

State Student Incentive Grant (SSIG) was predictable in that the equation yielded a multiple of 0.41 with residency and ethnic background as the most powerful predictors (0.39 and -0.21 respectively). The correlation with residency was anticipated because SSIG can be awarded only to residents. Additionally, it has a need threshold which requires that it be given only to the neediest students (predominantly the minority students). (See Table IV).

Federal Work-Study was almost totally a function of family income with ethnic background entering a weak second at -0.09. (See Table V).

Other aid was again a function of family income in terms of parental contribution which accounted for most of the equation variance (0.11). It should be noted that although the correlation is relatively weak and there is a large percentage of zero values (1320 out of 1426), the correlation is positive, which indicates that those with lower parental income are getting more aid. (See Table VI).

BEOG-SEOG (Basic Educational Opportunity Grant and Supplemental Educational Opportunity Grant) was the most significant predictor of GI Benefits (-0.14) and ethnic origin (-0.12) with a multiple of 0.22. (See Table VII).

National Direct Student Loans were mostly a function of income (-0.20) and other fiscal variables. (See Table VIII) with a multiple of 0.26.

A complete breakdown of who receives how much (mean values) aid is given in the table below in the form of the created variable TOTGNT 2 which includes only direct aid, grants, etc. (no missing values). (On Table IX note that males are missing 5 in the Anova; this accounts for the difference in the means.)

The accompanying analysis of variance by sex again results in a signficant F value (5.3231 p 0.02) with 648 males averaging $762.57 and 778 females averaging $843.27. With the standard deviation for the entire population at $658.64, there is obviously a great deal of overlap. This limits predictability on the basis of sex in the above regression equations.

In order to determine the distribution of aid by amount, the variable TOTGNT 2 was truncated into 500 dollar segments and cross-tabbed against both sex and then ethnic origin by sex. (The results are given in Tables X -XVI).

SUMMARY OF FINDINGS: CAMPUS C

The overall aid system for Campus C appears to be serving the needs of the students and the intent of the various programs.

1. Family income variables have, in every case, been the deciding moderator of the amount of aid received.
2. Aid seems to be more available to non-Caucasian ethnic groups.
3. Women seem to be favored slightly in the number and amount of aid being given, with minorities of both sexes receiving the largest amounts. The fact that women receive more aid is explained by the fact that more of them are single heads of households with minor dependents.

Predicting the amount of aid a given person will need with the above data will result in very large errors due to the weak predictability (low multiple) of the various derived equations. However, the formula for determining need and aid is quite completely controlled by regulation and it seems to be working.

The data could, however, be successfully used to estimate total amount of aid that will be required to support various combinations of student sub-group populations. For example, if an usually large number of minority or women students are matriculated, it is certain that more student aid will be required from the various sources discussed above as moderated by total available student income.

SUMMARY OF FINDINGS: CAMPUS B

Campus B data supported the results of Campus C. Sex became statistically significant at the 0.532 level.

The mean value of total aid for various groups are as follows:

Total Population	(807)	$1,435.99
Males	(466)	1,323.18
Females	(341)	1,590.15
Married	(52)	1,634.27
Single	(755)	1,422.33

Married Females	(20)	2,139.00
Single Females	(321)	1,555.95
Married Males	(32)	1,318.81
Single Males	(434)	1,323.50

Person R Correlation for Financial Condition was a negative 0.018 which reflects that aid is going to the people with the highest need.

The correlation for ethnic origin was 0.017 which indicates no discrimination among ethnic groups at Campus B.

The variable sex was correlated to aid distribution at 0.077 which, when analyzed with the multiple of 0.38, shows that sex is slightly significant 38 percent of the time with females receiving slightly more aid.

All the aid was used in the multiple regression for Campus B. In Federal Work-Study, marital status was the most significant predictor. The multiple was 0.29 which is statistically significant. This was also true for State Work-Study.

For Basic Educational Opportunity Grant, parental contribution was the most important predictor with sex as the next most important predictor and a correlation of 0.22, indicating that females receive slightly more awards.

In the National Direct Student Loan program, again parental contribution was the most important predictor and sex was 0.34 on multiple regression.

State aid was entered next in the regression with marital status as the first predictor which yielded a multiple r of 0.39. Dependency status was the second as most significant predictors.

Guaranteed Student Loans did not produce any outstanding statistics; none were usable in prediction.

Supplemental Educational Opportunity Grant was evaluated and dependency status was the most important predictor. Sex had a multiple regression of 0.27, and a single regression of -0.08 which is a somewhat significant predictor.

In the breakdown, using TOTGNT 2, which includes only direct aid and loans, sex resulted in significant F values of 12.3113 p .00000. Males received an average of $1,056.51 and females received $1,530.94. The mean for both sexes was $1,309.00.

SUMMARY OF FINDINGS: CAMPUS A

In the case of Campus A, a random sample of 2,000 cases was used. The sample is statistically useful and correct; the total population was 9,800 cases.

Dependent status was the most significant predictor of Federal Work-Study (0.4 at the -0.014), as well as State Work-Study (at .25, -0.117 level of significance). This slightly favored females.

For the Basic Educational Opportunity Grant, the most significant predictor was dependent status with sex at a surprising .53 multiple regression at the 0.0006 level of significance. This showed equity. National Direct Student Loan and State Aid tested out the same as Basic Grants.

Guaranteed Student Loan had as its most significant predictor the variable dependent status, but sex showed a multiple at 0.12 and -0.008.

In the breakdown for Campus A, there were 1,090 females and 897 males with 13 missing cases. The females received an average of $965.78 with males receiving $944.46, which demonstrates that females are receiving slightly higher awards.

BIBLIOGRAPHY

Astin, H.S., *Sex Discrimination in Education. Access to Post-Secondary Education,* 2 volumes, Los Angeles: Higher Education Research Institute, 1976.

Astin, H.S., Suniewick, N., and Dweck, S., *Women: A Bibliography on Their Education and Careers,* Washington, D.C.: Human Services Press, 1971.

Atelsek, F.J., and Gomberg, I.L., *Estimated Number of Student Aid Recipients, 1976-1977,* Washington, D.C.: American Council on Education, 1977.

Bob, Sharon, "The myth of Equality: Financial Support for Males and Females," *Journal of College Student Personnel,* 1977, 18(3), 235-38.

Brown, Robert D., and Heath, Howard, "An Investigation of Sex Discrimination in the Awarding of Finanical Aid to College Students," *Research in Higher Education,* 6, 4, 355-61, 1977.

Bugenhagen, Denise, and others, *Title IX Self Assessment Guide for Financial Aid Officers,* Financial Aid Office, Syracuse University, New York, March, 1976.

Carnegie Commission on Higher Education, *Next Steps for the 1980's in Student Financial Aid: A Fourth Alternative,* San Francisco: Jossey-Bass, Inc., 1979.

Carnegie Commission on Higher Education, *Opportunities for Women in Higher Education,* New York: McGraw Hill Book Company, 1973.

College Entrance Examination Board, *Unmet Needs: The Report of the CSS Student Advisory Committee on Student Financial Aid Problems,* Princeton, N.J: College Board Publications, 1976.

Cox, M.B., and Van Dusen, W.D., "How Educational Borrowing Affects the Female Students," *College Board Review,* 1969, 71: 28-31.

Cross, K. Patricia, "The Woman Students," *Women in Higher Education,* American Council on Education, Washington, D.C: American Council on Education, 1972, 31-52.

Cross, K. Patricia, and Jones, J. Quentin, "Problems of Access," *Exploration in Non-Tradition Study,* edited by Samuel Gould and K. Patricia Cross, San Francisco, CA: Jossey-Bass Inc., 1972, 39-63.

Davis, Jerry S., "Paying For College Costs: Does the Student's Sex Make a Difference?" *The Journal of Student Financial Aid,* Volume 7, No. 3, November, 1977.

Davis, Jerry S., and Van Dusen, William D., *Guide to The Literature of Student Financial Aid,* College Board, 1978.

Doerman, Humphrey, *Toward Equal Access,* College Board, 1978.

Doland, E.F., "Higher Education for Women: Time for Reappraisal," *Journal of Higher Education,* 1963, 20: 5-31.

Dorwan, E., "Internal Barriers to Women," *Women on Campus: 1970,* Ann Arbor, Michigan: University of Michigan Press, 1970.

Edwards, C.N., "Cultural Values and Role Decisions: A Study of Educated Women," *Journal of Counseling Psychology*, 1969, 16: 36-40.
Fields, C., and LeMay, M., "Student Financial Aid: Effects on Educational Decisions and Academic Achievement," *Journal of College Student Personnel*, 1974, 15(2), 114-119.
Finn Jr., Chester E., *Scholars, Dollars, and Bureaucrats*, The Brookings Institution, Washington, D.C., 1978.
Froombin, J., *Aspirations, Enrollments, and Resources*, Washington, D.C: U.S. Government Printing Office, 1970.
Gornick, V., and Moran, B.K. (eds.), *Woman in Sexist Society*, New York: Basic Books, 1971.
Hansen, W. Lee, and Weisbrod, Burton A., *Benefits, Costs and Finance of Public Higher Education*, Chicago: Markham Publishing Company, 1969.
Hatch, D.D., "Differential Impact of College on Males and Females," *Women on Campus: 1970*, Ann Arbor, Michigan: University of Michigan Press, 1970.
Haven, E.W., and Horch, D.H., *How College Students Finance Their Education*, New York: College Entrance Examination Board, 1972.
Henbrough, B.L., "A Two-Fold Educational Challenge: The Student Wife and the Mature Woman Student," *Journal of the National Association of Women Deans and Counselors*, 1966, 163-167.
Holmstrom, Engen I., "Higher Education and Social Mobility," *Individualizing The System*, Dyckman W. Vermilye, ed., San Francisco, California: Jossey-Bass, Inc., 1976.
Huddleston, T.J., and Batty, B.F., "Marketing Financial Aid," *New Directions for Higher Education*, 1978, 37-49.
Hurd, Joseph, "Enrollment and Cost Effects of Financial Aid Plans for Higher Education," *Project on Quantitative Policy Analysis Models of Demand and Supply in Higher Education: Technical Report No. 1, Carnegie Council Report on Policy Studies in Higher Education*, Berkeley, California, July 1977.
Husbands, Sandra Acker, "Women's Place in Higher Education," *School Review*, 1972, 80: 261-274.
The Impact of Office of Education Student Assistance Programs, Fall 1973, Higher Education Panel Report, No. 17, December 1975.
Jackson, G.A., "Financial Aid an Student Enrollments," *Journal of Higher Education*, 1978, 49(6), 548-579.
Katz, J., Comstock, P., and Lozoff, M.M., *Educational and Occupational Aspirations of Adult Women*, Stanford, California: Stanford University Press, 1970.
Keene, R., Adams, F.C., and King, J.E. (eds.), *Money Marbles or Chalk: Student Financial Support in Higher Education*, Carbondale and Edwardsville: Southern Illinois University Press, 1975.
Leslie, L.L., Johnson, G.P., and Carlson, J., "The Impact of Need-Based Student Aid Upon The College Attendance Decision," *Journal of Education Finance*, 1977, 2; 269-285.
Lewis, E.C., "Choice and Conflict for the College Woman." *Journal of the National Association of Women Deans and Counselors*, 1969, 32: 176-182.

Lyon, R., "Married Women and the Academic Tradition," *Journal of Higher Education*, 1964, 35: 255-257.

Macpherson, Pemberton S., *Inequality in Higher Education: Some Federal Policies Reviewed*, Office of Education, Department of Health, Education, and Welfare, Washington, D.C., January 1979.

Middle Income Students: A New Target for Federal Aid?, College Board, 1975.

Newcomer, Mabel, *A Century of Higher Education for Women*, New York: Harper Brothers, 1959.

Oetzel, Roberta M., "Annotated Bibliography and Classified Summary of Research in Sex Differences," *The Development of Sex Differences*, ed. Elenor Maccoby, Stanford, California: Stanford University Press, 1966.

Ostar, A.W., "Achieving Equal Access: Tuition, Student Aid and Public Policy," *Planning for Higher Education*, 1977, 6(3).

Perspectives on Financial Aid: Sources and Information, College Board, 1975.

Report to the Congress of the United States: Inconsistencies In Awarding Financial Aid To Students Under Four Federal Programs, The Comptroller General of The United States, HRD 79-16, May 1979.

Rice, Lois D., ed., *Student Loans: Problems and Policy Alternatives*, College Board, 1977.

Student Assistance: Participants and Programs 1974-75, Higher Education Panel Report No. 27, December 1975.

U.S. Department of Labor, *Facts About Women Heads of Households and Heads of Families*, Washington, D.C: U.S. Government Printing Office, 1969.

U.S. Department of Labor, *Trends in Educational Attainment of Women*, Washington, D.C: U.S. Government Printing Office, 1969.

U.S. Department of Labor, *Women and Work*, Washington, D.C: Office of Information, Publications and Reports, May 1973.

Van Dusen, William, "The Coming Crises in Student Aid: Report of the 1978 Aspen Institute Conference on Student Aid Policy," *The Journal of Student Financial Aid*, Volume 9, No. 1, February, 1979.

Vermilye, Dyckman W, ed., *Individualizing the System*, Current Issues in Higher Education, Jossey-Bass Publishers, San Francisco, 1976.

Weinschrott, David J., *Demand for Higher Education in the United States: A Critical Review of The Emperical Literature*, Rand Corp, Santa Monica, California, December 1977.

Westervelt,Esther Manning, *Barriers To Women's Participation in Postsecondary Education: A Review of Research and Commentary as of 1973-74*, National Center for Education Statistics, 1975.

Westervelt, Esther M., and Fixter, Deborah A., *Women's Higher and Continuing Education*, New York: College Entrance Examination Board, 1971.

Who Pays? Who Benefits? A National Invitational Conference on Independent Students, College Board, 1974.

Willingham, W.W., *Free-Access Higher Education*, New York: College Entrance Examination Board, 1970.

Winkler, Karen J., "Distribution of Student-Aid Funds to the Poor Sparks Controversy," *Chronicle of Higher Education*, November 5, 1973.

FILE NONAME (CREATION DATE = 80/07/13.)

* MULTIPLE REGRESSION *

DEPENDENT VARIABLE.. TOTGNT2 TOTAL ACTUAL GRANT MONEY EXCLUDING GI PA

SUMMARY TABLE

STEP	VARIABLE ENTERED	VARIABLE REMOVED	F TO ENTER OR REMOVE	SIGNIFICANCE	MULTIPLE R	R SQUARE	R SQUARE CHANGE	SIMPLE R	OVERALL F	SIGNIFICANCE
1	FINCOND		56.43641	.000	.19551	.03822	.03822	-.19551	56.43641	.000
2	EIR		28.63952	.000	.23727	.05725	.01903	-.15445	43.08721	.000
3	SEX		3.73017	.054	.24138	.05971	.00247	.05826	30.02347	.000
4	RESIDENC		4.09004	.043	.24984	.06243	.00271	.06203	23.59818	.000
5	RHYR		.76345	.382	.25067	.06294	.00051	.01668	19.02093	.000
6	MAR		.08338	.773	.25098	.06299	.00006	.00968	15.85441	.000

MONT TEST 80/07/13. 12.01.40. PAGE 17

FILE NONAME (CREATION DATE = 80/07/13.)

* MULTIPLE REGRESSION *

DEPENDENT VARIABLE.. TOTGNT2 TOTAL ACTUAL GRANT MONEY EXCLUDING GI PA

MEAN RESPONSE 808.12447 STD. DEV. 658.79238

VARIABLE(S) ENTERED ON STEP NUMBER 1.. INCOME INCOME

MULTIPLE R	.19551	ANALYSIS OF VARIANCE	DF	SUM OF SQUARES	MEAN SQUARE	F SIGNIFICANCE
R SQUARE	.03822	REGRESSION	1.	23573397.40488	23573397.40488	56.43456 .000
ADJUSTED R SQUARE	.03755	RESIDUAL	1420.	593151115.56348	417712.05321	
STD DEVIATION	646.30647	COEFF OF VARIABILITY	80.0 PCT			

VARIABLES IN THE EQUATION

VARIABLE	B	STD ERROR B	F SIGNIFICANCE	BETA ELASTICITY
INCOME	-.49574380E-02	.65991000E-03	56.434564 .000	-.1955084 -.09563
(CONSTANT)	885.40148	19.989164	1961.96480	

VARIABLES NOT IN THE EQUATION

VARIABLE	PARTIAL	TOLERANCE	F SIGNIFICANCE
SEX	.05374	.99906	4.1098645 .043
RHYR	.05035	.97628	3.6059651 .058
MAR	-.01486	.98475	.31355285 .576
ETH	-.14196	.99357	29.185905 .000
RESIDENC	.09996	.99907	14.322494 .000
PARCONT	-.05851	.36659	4.8746185 .027
DEPSTAT	-.02264	.83643	.72739670 .394
SIBCONT	.03455	.60710	1.6962881 .193
GIMEMB	-.09095	.99836	11.836044 .001

MONT TEST 80/07/13. 12.01.40. PAGE 18

FILE NONAME (CREATION DATE = 80/07/13.)

* MULTIPLE REGRESSION *

DEPENDENT VARIABLE.. TOTGNT2 TOTAL ACTUAL GRANT MONEY EXCLUDING GI PA

VARIABLE(S) ENTERED ON STEP NUMBER 2.. ETH ETHNIC

TABLE I

MONT TEST 80/07/13. 13.57.33. PAGE 13

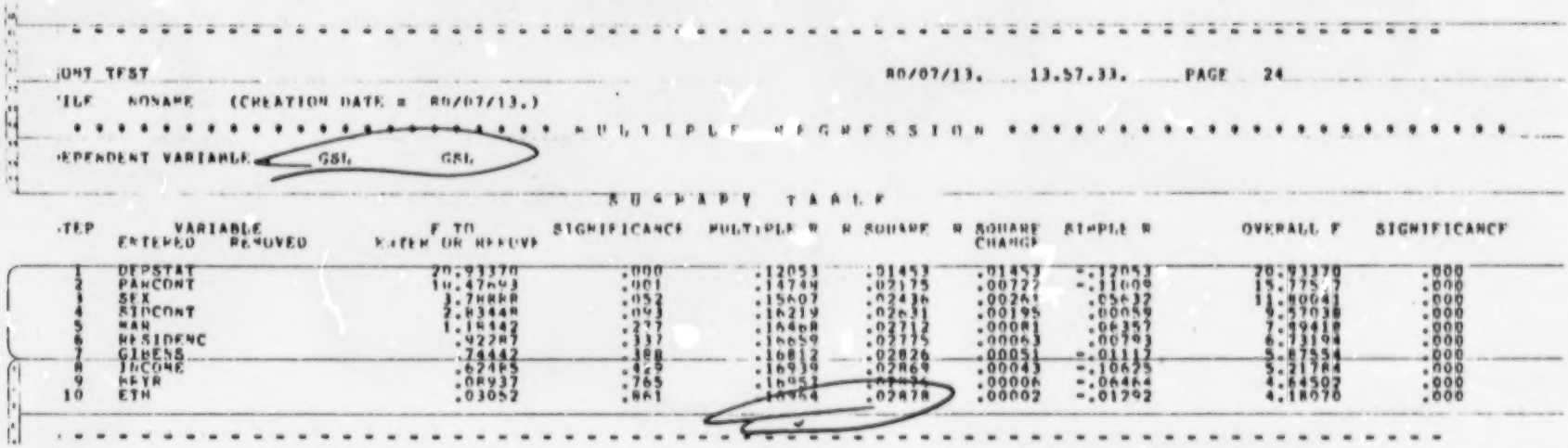
FILE NONAME (CREATION DATE = 80/07/13.)

* MULTIPLE REGRESSION *

DEPENDENT VARIABLE.. STATEAID STATE AID

SUMMARY TABLE

STEP	VARIABLE ENTERED	VARIABLE REMOVED	F TO ENTER OR REMOVE	SIGNIFICANCE	MULTIPLE R	R SQUARE	R SQUARE CHANGE	SIMPLE R	OVERALL F	SIGNIFICANCE
1	PARCENT		38.70229	.000	.16289	.02653	.02653	-.16289	38.70229	.000
2	RESIDENC		25.41373	.000	.20895	.04366	.01713	-.13193	32.39071	.000
3	PTH		13.25001	.000	.22916	.05251	.00885	-.05308	26.19689	.000
4	SEX		11.84390	.001	.24570	.06037	.00785	.10641	22.75890	.000
5	MAR		2.48573	.115	.24903	.06201	.00165	-.00841	18.72335	.000
6	INCOME		2.91054	.088	.25286	.06394	.00193	-.13934	16.10894	.000
7	STDCONT		2.85798	.091	.25657	.06583	.00189	-.02112	14.23407	.000
8	MAYR		.94136	.332	.25778	.06645	.00062	-.00759	12.57197	.000
9	GINENS		.25462	.592	.25818	.06664	.00019	-.01896	11.20141	.000
10	DEPSTAT		.02762	.868	.25819	.06666	.00002	-.06369	10.07708	.000



ONT TEST 80/07/13. 13.57.33. PAGE 24

ILE NONAME (CREATION DATE = 80/07/13.)

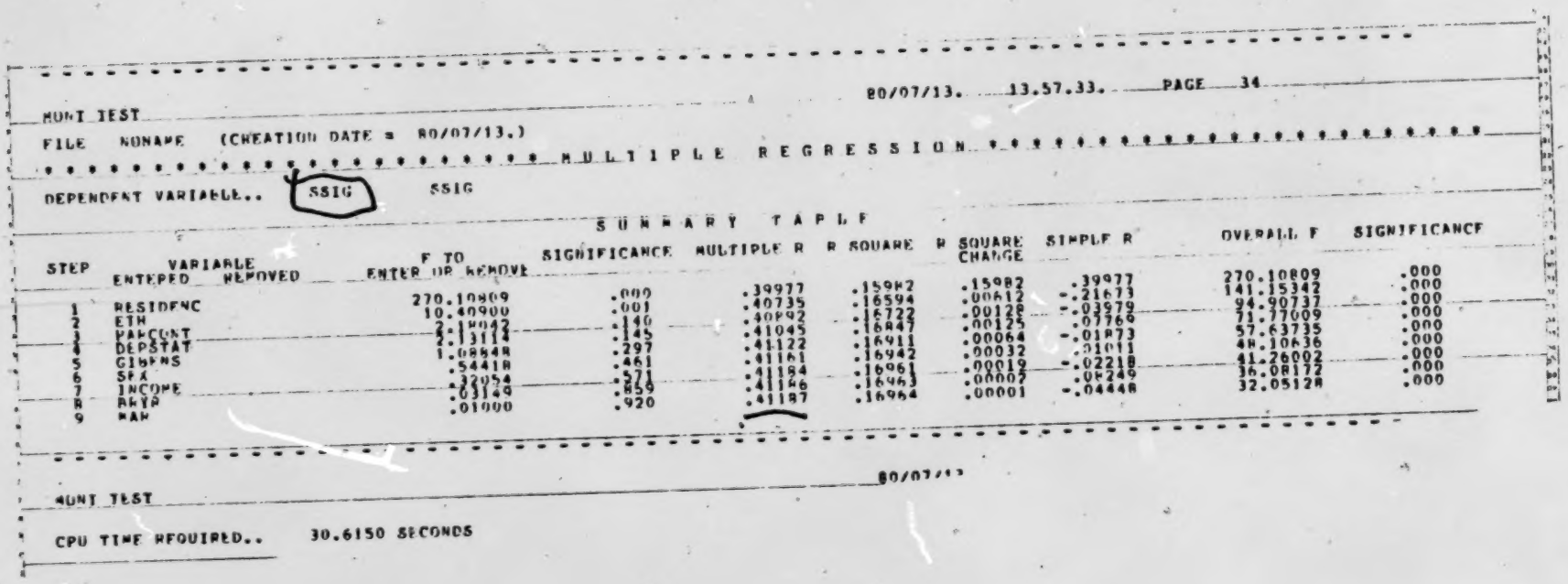
* MULTIPLE REGRESSION *

EPENDENT VARIABLE.. GSI GSI

SUMMARY TABLE

STEP	VARIABLE ENTERED	VARIABLE REMOVED	F TO ENTER OR REMOVE	SIGNIFICANCE	MULTIPLE R	R SQUARE	R SQUARE CHANGE	SIMPLE R	OVERALL F	SIGNIFICANCE
1	DEPSTAT		20.93370	.000	.12053	.01453	.01453	-.12053	20.93370	.000
2	PANCONT		14.47643	.001	.14744	.02175	.00722	-.11009	15.77517	.000
3	SEX		3.78888	.052	.15607	.02436	.00261	.05632	11.80041	.000
4	SIDCONT		2.83448	.093	.16219	.02631	.00195	.00059	9.57038	.000
5	WAR		1.18442	.277	.16468	.02712	.00081	.06357	7.99418	.000
6	RESIDENC		.92287	.337	.16659	.02775	.00063	.00703	6.73194	.000
7	GIRENS		.74442	.388	.16812	.02826	.00051	-.01117	5.87554	.000
8	INCOME		.62485	.429	.16939	.02869	.00043	-.10625	5.21784	.000
9	MEYR		.08937	.765	.16951	.02874	.00006	-.06464	4.64502	.000
10	ETH		.03052	.861	.16954	.02878	.00002	-.01292	4.18070	.000

TABLE III



80/07/13. 13.57.33. PAGE 34

4UNT TEST

FILE NONAME (CREATION DATE = 80/07/13.)

* * * \

MONT TEST 80/07/13. 13.06.38. PAGE 13

FILE NONAME (CREATION DATE = 80/07/13.)

* MULTIPLE REGRESSION *

DEPENDENT VARIABLE.. #SFED #ORASTUDY FEDERAL

SUMMARY TABLE

STEP	VARIABLE ENTERED	VARIABLE REMOVED	F TO ENTER OR REMOVE	SIGNIFICANCE	MULTIPLE R	R SQUARE	R SQUARE CHANGE	SIMPLE R	OVERALL F	SIGNIFICANCE
1	INCOME		43.48207	.000	.17237	.02971	.02971	-.17237	43.48207	.000
2	ETH		8.93594	.003	.18916	.03578	.00607	-.09149	26.33051	.000
3	STDCONT		2.78213	.096	.19409	.03767	.00189	-.14636	18.50310	.000
4	RESIDENC		2.00482	.157	.19756	.03903	.00136	-.00865	14.38836	.000
5	PARCONT		1.42475	.232	.20000	.04000	.00097	-.15966	11.80013	.000
6	BRYR		.71143	.399	.20120	.04048	.00048	.01989	9.95001	.000
7	DEPSTAT		.66447	.415	.20232	.04093	.00045	-.05457	8.62147	.000
8	SEX		.57411	.449	.20328	.04132	.00039	-.02465	7.61328	.000
9	MAR		.49660	.481	.20411	.04166	.00034	-.01548	6.82013	.000
10	GIBENS		.37384	.541	.20473	.04191	.00025	-.01780	6.17778	.000

TABLE V

MONT TEST 80/07/13. 13.04.38. PAGE 24

FILE NONAME (CREATION DATE = 80/07/13.)

* MULTIPLE REGRESSION *

DEPENDENT VARIABLE.. OTHER OTHER AID

SUMMARY TABLE

STEP	VARIABLE ENTERED	VARIABLE REMOVED	F TO ENTER OR REMOVE	SIGNIFICANCE	MULTIPLE R	R SQUARE	R SQUARE CHANGE	SIMPLE R	OVERALL F	SIGNIFICANCE
1	PARCONT		19.37823	.000	.11603	.01346	.01346	.11603	19.37823	.000
2	RESIDENC		13.79825	.000	.15154	.02296	.00950	.09623	16.47556	.000
3	STDCONT		3.08310	.079	.15838	.02508	.00212	-.09778	12.16106	.000
4	SEX		1.82330	.177	.16228	.02634	.00125	-.03918	9.58192	.000
5	GIBENS		1.50454	.220	.16544	.02737	.00103	-.02724	7.66917	.000
6	ETH		.21363	.644	.16588	.02752	.00015	-.03285	6.67288	.000
7	DEPSTAT		.12335	.726	.16614	.02760	.00008	.01842	5.73370	.000
8	INCOME		.34364	.558	.16685	.02784	.00024	.11197	5.05761	.000
9	BRYR		.11305	.737	.16708	.02792	.00008	.00963	4.50540	.000
10	MAR		.03556	.850	.16715	.02794	.00002	-.01436	4.05564	.000

31

TABLE VI

-LEVEL OR TOLERANCE-LEVEL INSUFFICIENT FOR FURTHER COMPUTATION.

ONT TEST — 80/07/13. 13.06.38. PAGE 33

ILE NONAME (CREATION DATE = 80/07/13.)

* MULTIPLE REGRESSION *

EPENDENT VARIABLE.. HEDGSPOG HEDGSPOG GRANTS

SUMMARY TABLE

STP	VARIABLE ENTERED	VARIABLE REMOVED	F TO ENTER OR REMOVE	SIGNIFICANCE	MULTIPLE R	R SQUARE	R SQUARE CHANGE	SIMPLE R	OVERALL F	SIGNIFICANCE
1	GIRLS		31.91613	.000	.14826	.02198	.02198	-.14826	31.91613	.000
2	FTH		24.75490	.000	.19685	.03875	.01677	-.12947	28.60248	.000
3	BRTH		10.74208	.001	.21443	.04598	.00723	-.11123	22.77992	.000
4	INCOME		4.42083	.036	.22124	.04895	.00297	-.04451	18.23131	.000
5	MAR		.62170	.431	.22218	.04936	.00042	-.06715	14.70554	.000
6	PRESIDENC		.22289	.637	.22251	.04951	.00015	.06279	12.28504	.000
7	SEX		.14669	.702	.22274	.04961	.00010	.00285	10.54464	.000
8	DEPSTAT		.12410	.725	.22292	.04969	.00008	.04777	9.23636	.000

MONT TEST 80/07/13. 13.06.38. PAGE 43

FILE NONAME (CREATION DATE = 80/07/13.)

* MULTIPLE REGRESSION *

DEPENDENT VARIABLE.. NDSL NDSL

SUMMARY TABLE

STEP	VARIABLE ENTERED	VARIABLE REMOVED	F TO ENTER OR REMOVE	SIGNIFICANCE	MULTIPLE R	R SQUARE	R SQUARE CHANGE	SIMPLE R	OVERALL F	SIGNIFICANCE
1	INCOME		65.39918	.000	.20983	.04403	.04403	-.20983	65.39918	.000
2	STUCONT		35.94665	.000	.26009	.06765	.02362	-.01178	51.47766	.000
3	BRYR		2.66067	.102	.26345	.06941	.00176	-.06842	35.25271	.000
4	PARCONT		1.44628	.229	.26525	.07035	.00095	-.17780	26.80943	.000
5	DEPSTAT		1.74805	.186	.26740	.07150	.00115	-.16194	21.40847	.000
6	MAR		1.09251	.295	.26874	.07222	.00072	.04893	18.35790	.000
7	SEX		.44506	.505	.26928	.07251	.00029	.04106	15.79275	.000
8	RESIDENC		.32457	.569	.26968	.07273	.00021	-.00190	13.85263	.000
9	GIBENS		.17329	.677	.26989	.07284	.00011	.01780	12.32550	.000

07/13. 13.06.38. PAGE 44

FILE NONAME (CREATION DATE = 80/07/13.)

- - - - - - - - - - - - - - - - - - DESCRIPTION OF SUBPOPULATIONS - - - - - - - - - - - - - - - - - -

CRITERION VARIABLE TOTGNT2 TOTAL ACTUAL GRADE POINT EXCLUDING GT PR
BROKEN DOWN BY SEX SEX
BY ETH ETHNIC
BY DEPSTAT DEPENDENT STATUS

VARIABLE	CODE	VALUE LABEL		MEAN	STD DEV	VARIANCE		N
FOR ENTIRE POPULATION			1150215.0000	806.6024	658.6434	433811.1628	(	1426)
SEX	1.	MALE	494149.0000	762.5756	652.0646	425188.2354	(	648)
ETH	1.	AMERICAN INDIAN	463.0000	463.0000	0	0	(	1)
DEPSTAT	2.		463.0000	463.0000	0	0	(	1)
ETH	2.	BLACK	136131.0000	958.6690	728.6139	530878.1805	(	142)
DEPSTAT	1.		43585.0000	764.6491	734.2645	542085.4104	(	57)
DEPSTAT	2.		91194.0000	1101.0120	701.7345	492431.3779	(	83)
DEPSTAT	3.		1162.0000	581.0000	70.7107	5000.0000	(	2)
ETH	3.	ASIAN	62596.0000	1043.2667	614.6411	377783.7243	(	60)
DEPSTAT	1.		35128.0000	1097.7500	705.3210	497479.0323	(	32)
DEPSTAT	2.		25695.0000	1027.8000	480.6498	231024.2500	(	25)
DEPSTAT	3.		1773.0000	591.0000	551.4535	304101.0000	(	3)
ETH	4.	HISPANIC	26634.0000	719.8378	562.4112	316306.3619	(	37)
DEPSTAT	1.		12620.0000	742.3529	786.5428	618648.6176	(	17)
DEPSTAT	2.		13483.0000	709.6316	283.0762	80132.1345	(	19)
DEPSTAT	3.		531.0000	531.0000	0	0	(	1)
ETH	5.	WHITE NON-HISPANIC	246546.0000	648.8053	599.7493	359699.1704	(	380)
DEPSTAT	1.		127483.0000	643.8535	693.4367	480854.5216	(	198)
DEPSTAT	2.		110761.0000	667.2349	477.9175	228405.1020	(	166)
DEPSTAT	3.		8302.0000	518.8750	488.4981	238630.3833	(	16)
ETH	6.	OTHER	21779.0000	777.8214	744.6290	554472.3003	(	28)
DEPSTAT	1.		14170.0000	745.7895	814.6960	663724.6199	(	19)
DEPSTAT	2.		6069.0000	867.0000	630.6785	397755.3333	(	7)
DEPSTAT	3.		1540.0000	770.0000	749.5332	561800.0000	(	2)
SEX	2.	FEMALE	656066.0000	843.2725	662.2584	438586.7674	(	778)
ETH	1.	AMERICAN INDIAN	7128.0000	1188.0000	252.3466	63678.8000	(	6)
DEPSTAT	1.		2281.0000	1140.5000	198.6970	39480.5000	(	2)
DEPSTAT	2.		4847.0000	1211.7500	301.1892	90714.9167	(	4)
ETH	2.	BLACK	141779.0000	843.9226	612.6521	375348.7545	(	168)
DEPSTAT	1.		67959.0000	943.8750	709.7401	503731.0123	(	72)
DEPSTAT	2.		72786.0000	808.7333	510.4161	260526.6667	(	90)
DEPSTAT	3.		1034.0000	172.3333	197.2376	38902.6667	(	6)
ETH	3.	ASIAN	99149.0000	1139.6437	702.2071	493094.8367	(	87)
DEPSTAT	1.		63244.0000	1374.8696	798.7850	638057.4048	(	46)

```
MONT TEST                                                    80/07/15.   14.30.05.   PAGE   3
FILE   NONAME   (CREATION DATE = 80/07/15.)

* * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N   O F * * * * * * * * * * * * * * * * * *
     TGT      TRUNCATED TOTAL GRANTS AVAILABLE TO STUD     BY  SEX      SEX
CONTROLLING FOR..
     ETH      ETHNIC                                          VALUE   1.  AMERICAN INDIAN
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * PAGE  1 OF  1

                                SEX
                COUNT       |
                ROW PCT     | MALE      FEMALE    | ROW
                COL PCT     |                     | TOTAL
                TOT PCT     |     1.|       2.|
TGT             ------------|-------|---------|
                      2.    |     1 |       0 |     1
  LT 500                    |  100.0|       0 |  14.3
                            |  100.0|       0 |
                            |   14.3|       0 |
                ------------|-------|---------|
                      3.    |       |       2 |     2
  500-1000                  |     0 |   100.0 |  28.6
                            |     0 |    33.3 |
                            |     0 |    28.6 |
                ------------|-------|---------|
                      4.    |       |       3 |     3
  1000-1500                 |     0 |   100.0 |  42.9
                            |     0 |    50.0 |
                            |     0 |    42.9 |
                ------------|-------|---------|
                      5.    |       |       1 |     1
  1500-2000                 |     0 |   100.0 |  14.3
                            |     0 |    16.7 |
                            |     0 |    14.3 |
                ------------|-------|---------|
                COLUMN      |     1 |       6 |     7
                TOTAL       |  14.3 |    85.7 |  100.0

RAW CHI SQUARE =      7.00000 WITH      3 DEGREES OF FREEDOM.  SIGNIFICANCE =   .0719
CRAMER'S V = 1.00000
CONTINGENCY COEFFICIENT =   .70711
LAMBDA (ASYMMETRIC) =    .25000 WITH TGT      DEPENDENT.          =  1.00000 WITH SEX      DEPENDENT.
LAMBDA (SYMMETRIC) =     .40000
UNCERTAINTY COEFFICIENT (ASYMMETRIC) =    .32115 WITH TGT      DEPENDENT.          =  1.00000 WITH SEX      DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) =     .48616
KENDALL'S TAU B =   .59409
KENDALL'S TAU C =   .48980
GAMMA = 1.00000
SOMERS'S D (ASYMMETRIC) =  1.00000 WITH TGT      DEPENDENT.          =   .35294 WITH SEX      DEPENDENT.
SOMERS'S D (SYMMETRIC) =    .52174
ETA =   .71005 WITH TGT      DEPENDENT.
ETA =  1.00000 WITH SEX      DEPENDENT.
PEARSON'S R =    .71005    SIGNIFICANCE =   .0369
```

FILE NONAME (CREATION DATE = 80/07/15.)

* * * * * * * * * * * * * * * * * * * C R O S S-T A B U L A T I O N O F * * * * * * * * * * * * * * * * * * *

TGT TRUNCATED TOTAL GRANTS AVAILABLE TO STUD BY SEX SEX

CONTROLLING FOR.. ETH ETHNIC VALUE 2. BLACK

* * * * * * * * * * * * * * * * * * \

FILE NONAME (CREATION DATE = 80/07/15.)

* C R O S S T A B U L A T I O N O F *

TGT TRUNCATED TOTAL GRANTS AVAILABLE TO STUD BY SEX SEX

CONTROLLING FOR.. ETH ETHNIC VALUE 3. ASIAN

* * * * * * * * * * * * * * * * * * * \

FILE NONAME (CREATION DATE = 80/07/15.)

* CROSSTABULATION OF *

TGT TRUNCATED TOTAL GRANTS AVAILABLE TO STUD BY SEX SEX

CONTROLLING FOR.. ETH ETHNIC VALUE 4. HISPANIC

* * * * * * * * * * * * * * * * * * * \

MONT TEST

FILE NONAME (CREATION DATE = 80/07/15.)

C R O S S T A B U L A T I O N O F

TGT TRUNCATED TOTAL GRANTS AVAILABLE TO STUD BY SEX

CONTROLLING FOR.. ETH ETHNIC VALUE 5. WHITE NON-HISPANIC

TGT	COUNT / ROW PCT / COL PCT / TOT PCT	SEX 1. MALE	2. FEMALE	ROW TOTAL
1. ZERO		67 / 54.9 / 17.6 / 8.2	55 / 45.1 / 12.6 / 6.7	122 / 15.0
2. LT 500		103 / 48.4 / 27.1 / 12.6	110 / 51.6 / 25.2 / 13.5	213 / 26.1
3. 500-1000		122 / 45.0 / 32.1 / 15.0	149 / 55.0 / 34.2 / 18.3	271 / 33.2
4. 1000-1500		54 / 47.0 / 14.2 / 6.6	61 / 53.0 / 14.0 / 7.5	115 / 14.1
5. 1500-2000		20 / 35.7 / 5.3 / 2.5	36 / 64.3 / 8.3 / 4.4	56 / 6.9
6. 2000-2500		11 / 45.8 / 2.9 / 1.3	13 / 54.2 / 3.0 / 1.6	24 / 2.9
7. 2500-3000		0 / 0 / 0 / 0	7 / 100.0 / 1.6 / .9	7 / .9
8. GT 3000		3 / 37.5 / .8 / .4	5 / 62.5 / 1.1 / .6	8 / 1.0
COLUMN TOTAL		380 / 46.6	436 / 53.4	816 / 100.0

RAW CHI SQUARE = 12.98260 WITH 7 DEGREES OF FREEDOM. SIGNIFICANCE = .0725

MONT TEST 80/07/15. 14.30.05. PAGE 11

CRAMER'S V = .12614
CONTINGENCY COEFFICIENT = .12514
LAMBDA (ASYMMETRIC) = 0 WITH TGT DEPENDENT. = .03158 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = .01297
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = .00583 WITH TGT DEPENDENT. = .01393 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = .00822
KENDALL'S TAU B = .07835 SIGNIFICANCE = .0065
KENDALL'S TAU C = .09723 SIGNIFICANCE = .0065
GAMMA = .12613
SOMERS'S D (ASYMMETRIC) = .09769 WITH TGT DEPENDENT. = .06284 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = .07848
ETA = .09439 WITH TGT DEPENDENT.
ETA = .12614 WITH SEX DEPENDENT.
PEARSON'S R = .09439 SIGNIFICANCE = .0035

TABLE XIV

FILE NONAME (CREATION DATE = 80/07/15.)

* * * * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * * *

TGT TRUNCATED TOTAL GRANTS AVAILABLE TO STUD BY SEX SEX

CONTROLLING FOR... ETH ETHNIC VALUE 6. OTHER

* * * * * * * * * * * * * * * * * * \

FILE NONAME (CREATION DATE = 80/07/15.)

* CROSSTABULATION OF * * * * * * * * * * * * * * * * * * *
TGT TRUNCATED TOTAL GRANTS AVAILABLE TO STUD BY SEX SEX
* PAGE 1 OF 1

TGT	SEX: MALE (1.)	SEX: FEMALE (2.)	ROW TOTAL
1. ZERO	104	80	184
	56.5	43.5	12.9
	16.0	10.3	
	7.3	5.6	
2. LT 500	137	173	310
	44.2	55.8	21.7
	21.1	22.2	
	9.6	12.1	
3. 500-1000	205	252	457
	44.9	55.1	32.0
	31.6	32.4	
	14.4	17.7	
4. 1000-1500	117	142	259
	45.2	54.8	18.2
	18.1	18.3	
	8.2	10.0	
5. 1500-2000	53	89	142
	37.3	62.7	10.0
	8.2	11.4	
	3.7	6.2	
6. 2000-2500	26	27	53
	49.1	50.9	3.7
	4.0	3.5	
	1.8	1.9	
7. 2500-3000	1	8	9
	11.1	88.9	.6
	.2	1.0	
	.1	.6	
8. GT 3000	5	7	12
	41.7	58.3	.8
	.8	.9	
	.4	.5	
COLUMN TOTAL	648	778	1426
	45.4	54.6	100.0

RAW CHI SQUARE = 17.77773 WITH 7 DEGREES OF FREEDOM. SIGNIFICANCE = .0130
CRAMER'S V = .11166
CONTINGENCY COEFFICIENT = .11097

- - - -